

Work Order ID 147224

Wednesday, June 08, 2016 8:02:38 AM

147224

Page 1

Item ID: 647.2114

Revision ID:

Item Name: Upper U Channel

Start Date: 06/08/2016 Start Qty: 6.00

Required Date: 06/20/2016 Req'd Qty: 6.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
647.2100	C1

100

0.00

100

Bandsaw

Jeaspa Bandsaw

Memo

CUT AT 22.000" LONG

0.08

0.00

105

105

HAAS 5 AXIS

HAAS CNC vertical machine #5

Memo

1-Machine per folio FB476

DWG REV: C

FOLIO REV: AA

1.00

2- Deburr and break all sharp edges

DAS
08
9-89

DAS
08
9-89

PTO →
last page

147224

Page 2

N900040100

Setup Start *NS1*

Stop *NS2*

Start Date: 06/08/2016 **Start Qty:** 6.00

6

Cust Item ID:

Required Date: 06/20/2016 **Req'd Qty:** 6.00

6

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Operation Description

Set Up/ Run Hours

Tool ID	Tool #	Plan Code
---------	--------	-----------

**Accept
Qty**

Reject
QtyReject
Number

**Insp.
Stamp**

110

QC1- Inspection performed by CMM

0.00

110

QC

Memo

0.17

Quality Control

Inspect on CMM as per folio CMMA038.

DWG REV: C

CMM PROG. REV: AA

117

QC8- Inspect parts - second check

0.00

117

QC

Memo

0.02

Quality Control

Work Order ID 147224

Wednesday, June 08, 2016 8:02:38 AM

147224

Page 3

Item ID: 647.2114

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Upper U Channel

Start Date: 06/08/2016 Start Qty: 6.00

6

Cust Item ID:

Required Date: 06/20/2016 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	Outsource process-Anodize per QSI017 4.1.10.1	0.00							
120									
Outsource4	Memo	251.99							
Outsource process - Anodize	Issue P/O to ATG : <u>32760</u>								
	1- Anodize as per MPP-172 sect. 2.1								
	2- Pretreatment as per MPP-172 sect. 3.3								
	3-Prime as per MPP-172 sect. 4.3								
	Certification of Conformity is required								
130	Receive & Inspect for Damage & Mat'l Certs	0.00							
130									
Packaging	Memo	0.02							
Packaging									

6 JUN 20 2016 13
989CD 16106130 6

Work Order ID 147224

Wednesday, June 08, 2016 8:02:38 AM

147224

Page 4

Item ID: 647.2114 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Upper U Channel
 Start Date: 06/08/2016 Start Qty: 6.00 *6* Cust Item ID:
 Required Date: 06/20/2016 Req'd Qty: 6.00 *6* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.02							DAS 38 9-89 JUN 30 2016
170 *170* Packaging Packaging	Identify as per dwg & Stock Location: <u>CCK</u> Memo Identify as per MPP-120	0.00 0.01				6X			DAS 28 9-89 JUN 30 2016
190 *190* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.10							16/7/4 dg 5th 6/30/16

Picklist Print

Wednesday, June 08, 2016 8:02:37 AM

Page 1

Work Order ID: 147224

147224

Parent Item: 647.2114

647 2114

Parent Item Name: Upper U Channel

Start Date: 06/08/2016

Required Date: 06/20/2016

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A NEW ISSUE 16/05/13 JFS VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B1.750X02.25 0		Purchased		No		100	f	52.5251	1.834	11.58316			

M7075T6B1 750X02 250

7075-T6 BAR 1.750" X 2.250"

**

G.A 16/06/10

Location

Loc Qty

Loc Code

MAT006

52.5251

→ M130312

24

M131552

4.5251

M132458

24

13.2315^{ft}



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05368

SHEET 1 OF 1

DWG NO. 647.2100

REV: C

PREPARED
BY

J. BECKER

DATE: 03/31/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: MOUNTING CHANNEL

APPROVED BY:

ENGR

MFG

QC

EFF.

NEXT ORDER

TRANSACTION CODES (TC):
A-ADD
R-REVISE
C-CREATE
D-DELETE

REASON: REVISED FINISH TO INCLUDE ANODIZE.

ECR:

N/A

ACTION ITEM:

1.

SHEET 1, ZONE C5 IS:

NOTES:

1. MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
2. FINISH IAW MPP-172, SECTION 2.1, 3.3 & 4.3; 1-2 MIL MAX
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120.
5. HOLE LOCATIONS CONTROLLED BY 647.2110.
6. HOLE LOCATIONS CONTROLLED BY SOLIDWORKS MODEL P/N 647.2114, LAST SAVED 02/29/16.

IS

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO

w/o 146667

dem 16/05/19

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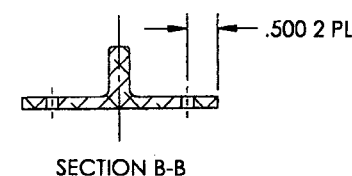
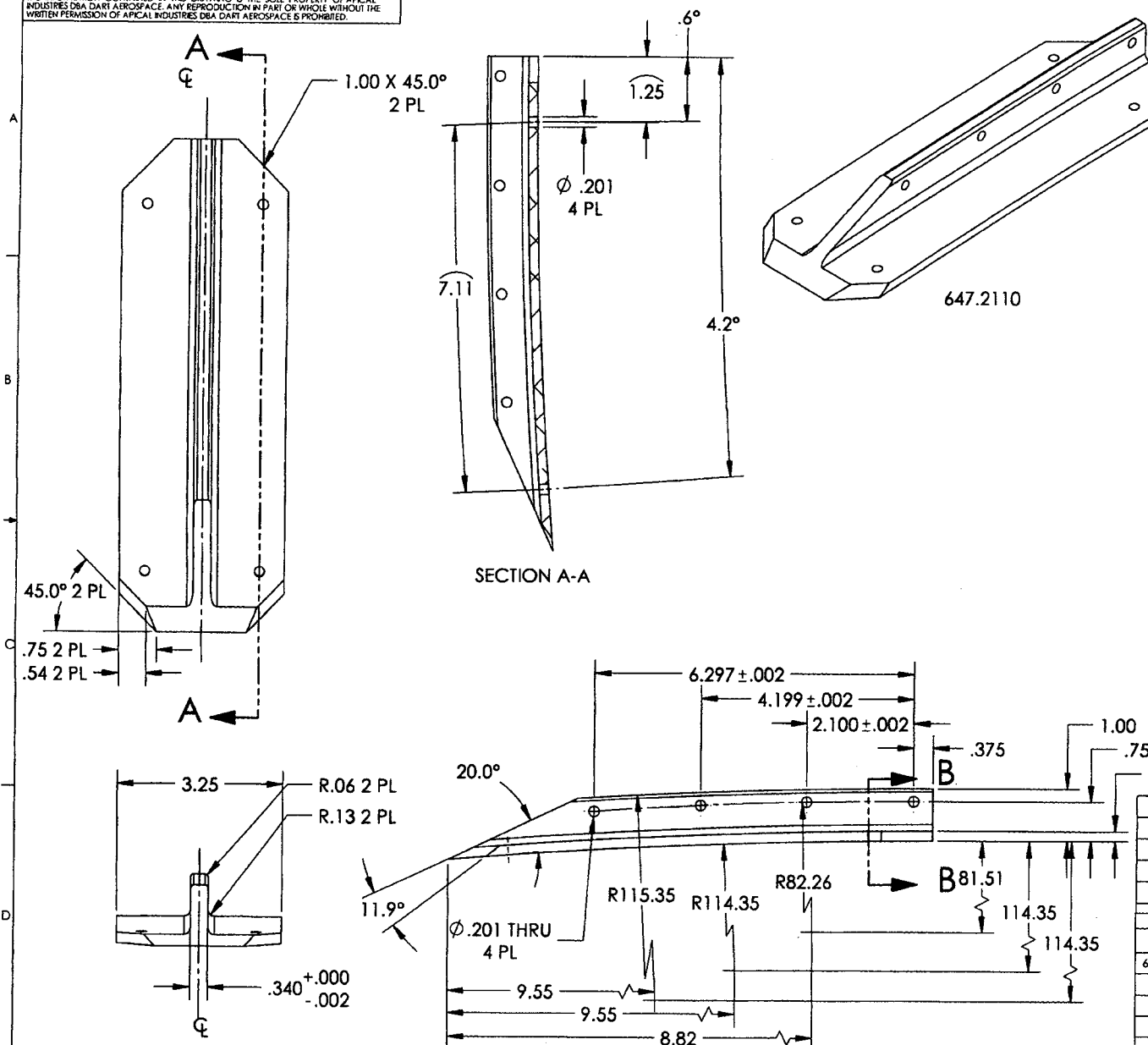
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION: PR2		N/C
NC	INITIAL RELEASE	06/05/07	P. BRAVO
A	INCORPORATED ECN 02895, 02841, 02920	04/07/13	P. BRAVO
B	INCORPORATED ECN 03956	07/01/13	P. BRAVO
C	INCORPORATED ECN 03326	02/24/16	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172, SECTION 3.3 & 4.3; 1-2 MIL MAX
3. DEBURR AND BREAK ALL SHARP EDGES
4. IDENTIFY IAW MPP-120.
- 5 HOLE LOCATIONS CONTROLLED BY 647.2110.
- 6 HOLE LOCATIONS CONTROLLED BY SOLIDWORKS MODEL P/N 647.2114, LAST SAVED 02/29/16.

UNINCORPORATED ECN(S)

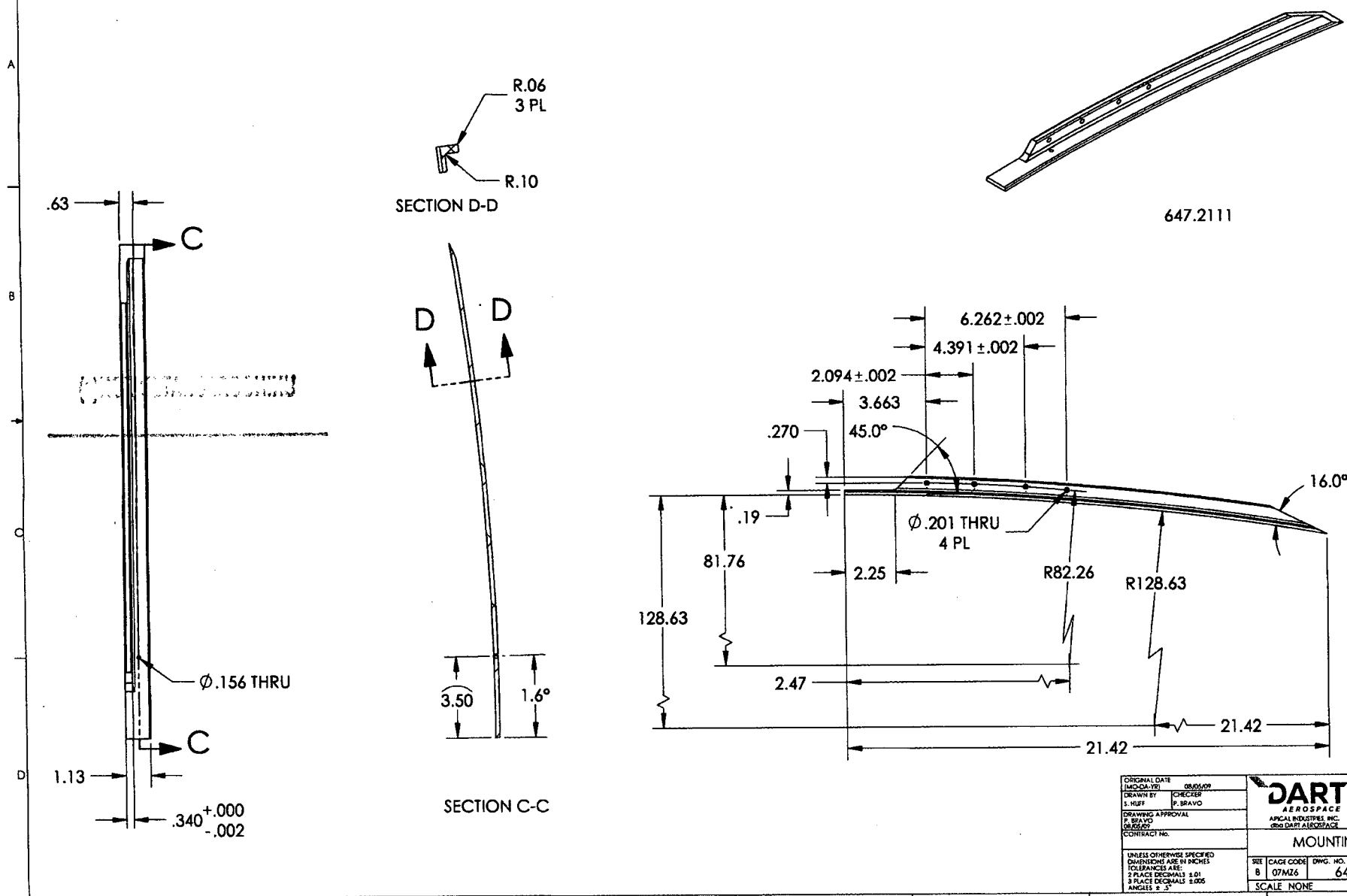
053168



QTY	FINO #	PART #	DESCRIPTION	MATL	SPEC.
	5	647.2114	UPPER U CHANNEL	△	△
	4	647.2113	LOWER RAIL	△	△
	3	647.2112	UPPER U CHANNEL	△	△
	2	647.2111	UPPER RAIL	△	△
	1	647.2110	LOWER RAIL	△	△
PARTS LIST					
ORIGINAL DATE: 06/05/07					
DRAWN BY: S. HUBB					
DRAWING APPROVAL: P. BRAVO					
CONTRACT NO.					
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 2 PLACE DECIMALS ±.01; 3 PLACE DECIMALS ±.005; ANGLES ±.5°					
NEXT ASSY (S)			DART AEROSPACE		
645.1700, 647.1300			3030 ENTERPRISE CT., SUITE A, VISTA, CA 92081 (760)-724-5300		
			MOUNTING RAIL		
			SIZE: CAGE CODE: 07M26	DWG. NO.: 647.2100	REV. C
			SCALE: NONE		
			SHEET 1 OF 5		

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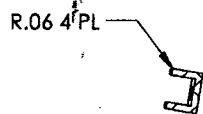
ORIGINAL DATE (MM-DD-YY)	08/05/09	 DART AEROSPACE APICAL INDUSTRIES, INC. (DBA DART AEROSPACE)	3030 ENTERPRISE C SUITE A VISTA, CA, 92083 (760) 724-5300	
DRAWN BY	S. HUFF		CHECKER	P. BRAVO
DRAWING APPROVAL	P. BRAVO		08/05/09	
CONTRACT NO.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ± .5°				
SIZE	8	CAGE CODE	07M26	
DWG. NO.	647.2100			
SCALE	NONE			
		SHEET	2 OF 5	

DART 3030 ENTERPRISE CT. SUITE A
AEROSPACE VISTA, CA. 92083
APICAL INDUSTRIES, INC. (760)-724-5300
(DBA DART AEROSPACE)

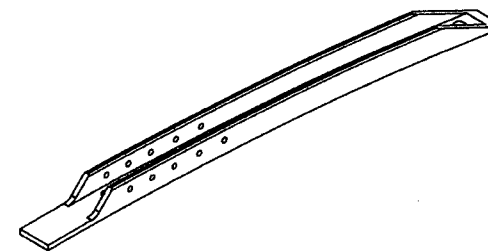
MOUNTING RAIL

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SECTION K-K



647.2112

H
← .895

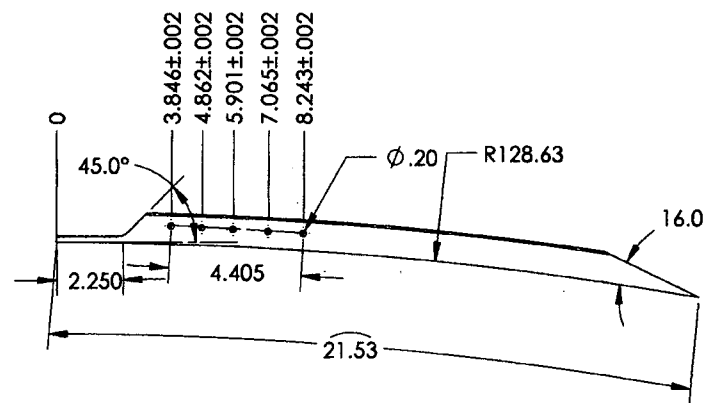


SECTION H-H

Ø .201 THRU 10 PL
∠ .439 X 100°

1.841 8 PL
3.497

1.32
.63
H
←

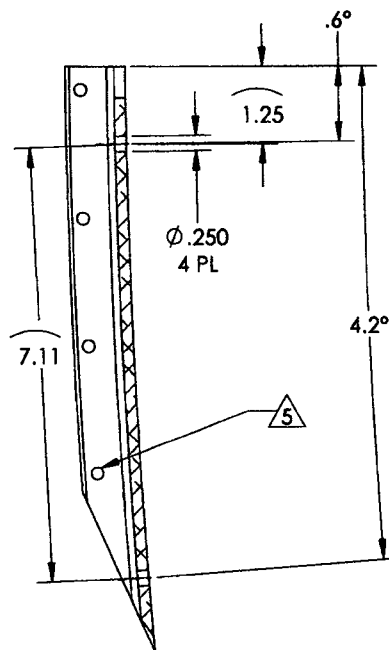
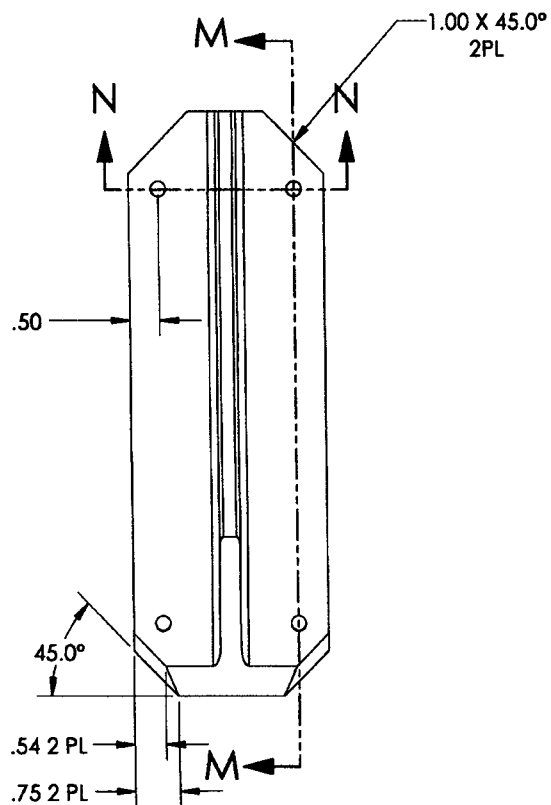


ORIGINAL DATE 08/05/09		DART 3030 ENTERPRISE CT. SUITE A	
DRAWN BY S. HUFF		VISTA, CA 92081	
CHECKED BY P. BRAVO		(760)-724-5300	
DRAWING APPROVAL P. BRAVO		APICAL INDUSTRIES, INC. DBA DART AEROSPACE	
CONTRACT NO.		MOUNTING RAIL	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		SIZE B	REV. C
CAGE CODE 07M26		DWG. NO. 647.2100	SHEET 3 OF 5
SCALE NONE			

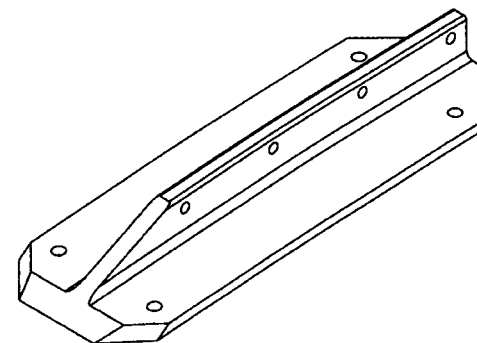
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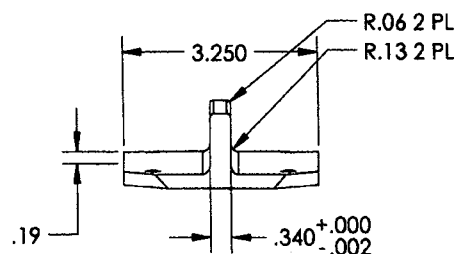
SECTION M-M



647.2113



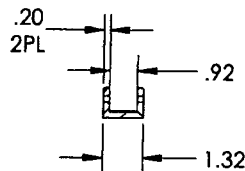
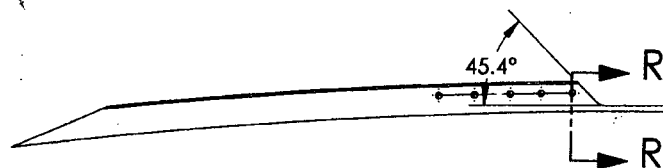
SECTION N-N



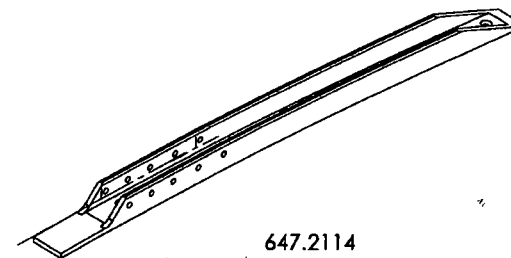
ORIGINAL DATE JUN-04-19	DESIGNED S. HUFF	CHECKED P. BRAVO	APPROVED P. BRAVO	CONTRACT NO.
DART 3030 ENTERPRISE CT. SUITE A AEROSPACE VISTA, CA. 92083 APICAL INDUSTRIES INC. (760)-724-5300 DBA DART AEROSPACE				
MOUNTING RAIL				
SIZE B	CAGE CODE 07M26	DWG. NO. 647.2100	REV. C	SHEET 4 OF 6
SCALE NONE				

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ± .01
3 PLACE DECIMALS ± .005
ANGLES ± .5°

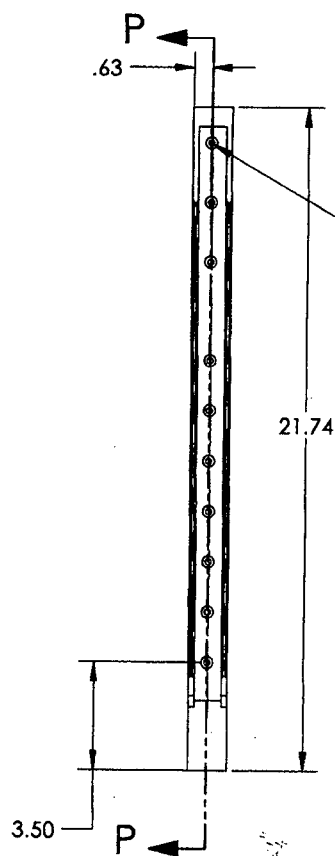
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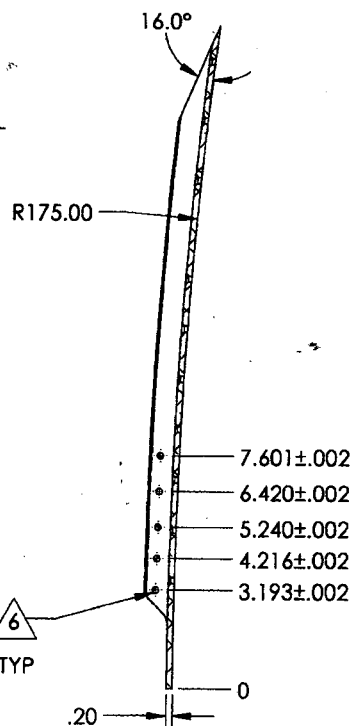
SECTION R-R



647.2114



10X $\phi .201$ THRU ALL
 $\angle \phi .39 \times 100^\circ$



SECTION P-P

ORIGINAL DATE 11-02-90		DRAFTSMAN P. BRAVO		3030 ENTERPRISE CT. SUITE A VISTA, CA. 92081 (760) 724-5300	
DRAWN BY S. HUFF		CHECKER P. BRAVO		APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DRAWING APPROVAL P. BRAVO		DESIGNER P. BRAVO		CONTRACT NO.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°				MOUNTING RAIL SIZE B CAGE CODE 07M26 DWG. NO. 647.2100 REV. C SCALE NONE SHEET 5 OF 5	

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DQA:

Date:

16/07/08



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed:

Date:

16/07/04

Work Order update only ☐

Work Order: 147224	DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS				
Part No. 6472114		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	
NCR No. 16-5884		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☒	Quality ☐	
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	
		Large Fab ☐	Composite ☐	Supplier ☐		

Date: 16.06.15	Step #: 105	QTY Effective: ①	MRB (QSI042) Approval DAS 9 9-89 16.06.15
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Description Work Order Deviation → 2 holes are drilled at the wrong location due to an error between Surfcam software and the post processor	Disposition → Scrap n replace B# = M130312 → Program has been fixed and updated Rq 16.06.11	Completed By DAS 08 9-89 16/06/11 Lead hand / Supervisor Approval Verification DAS 9 9-89 16.06.15 QC / QA Coordinator Approval DAS 9 9-89 16.06.15
--	--	---

Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☒ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☒ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

OUTSTANDING PO REPRINT

Purchase Order ID **PO32760**

Purchase Order Date 6/20/2016

PO Print Date 6/27/2016

Page Number 2 of 7

Order From : VC-ATG001

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

Ship To : DART AEROSPACE LTD

1270
ABERD
EEN
HAWKE
SBURY,
ON
K6A
1K7
CANAD
A

Contact Name		Buyer	Chantal Lavoie
Vendor Phone	613-446-4544	Customer POID	
Vendor Fax	613-446-4556	Customer Tax #	10127-2607
Ship To Contact		Terms	Net 30
Ship To Phone		Currency	CAD
		FOB	FCA - (Free Carrier)
Ship Method	VENDOR'S TRUCK		
Ship Acct			

Line Nbr	Item ID Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable	Req Qty	Extended Price
----------	---	------------------------	----------------------	---------	-------------------

7	147224	647.2114 UPPER U CHANNEL REV. C	6/30/2016 Yes	6.00 ✓ <i>C216/06/30</i>	\$63.90
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6/30/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2 / PRIME AS PER IAW MIL-P-23377J TYPE I CLASS N

Line Total: \$63.90

8	146954	D5230-3 MOUNTING PLATE REV. A	7/8/2016 Yes	6.00	\$36.00
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7/8/2016

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2

Line Total: \$36.00

6/27/2016



A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE STREET
ROCKLAND, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 911901

Date: 29-Jun-16

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

CHANTAL LAVOIE
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
Quantity	Description		
	PLEASE REFERENCE THE PACK LIST NUMBER ON ALL CORRESPONDENCE TO THIS SHIPMENT. IF YOU HAVE ANY QUESTIONS, PLEASE CALL AT (613) 446-4544.		
13 ea	Part: 147818 D5312-1 Tie Down Job: 19717	Rev: PO: 32760	Line:
10 ea	Part: 146966 D4726-1 Handle Job: 19709	Rev: PO: 32760	Line: 11
6 ea	Part: 146730 647.1513 Upper deflector Job: 19712	Rev: C PO: 32760	Line: 16
3 ea	Part: 146297 647.0110 Roof doubler Job: 19704	Rev: A PO: 32760	Line: 6
6 ea	Part: 147224 647.2114 Job: 19705	Rev: C PO: 32760	Line: 7
DATE: 29/6/16			
CERTIFIED SIGNATURE:			
RECEIVER SIGNATURE:			
Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
CERTIFICATE OF CONFORMANCE			
A.T.G. INDUSTRIES INC. CERTIFIES THAT ALL ITEMS IN THIS SHIPMENT CONFORM TO			